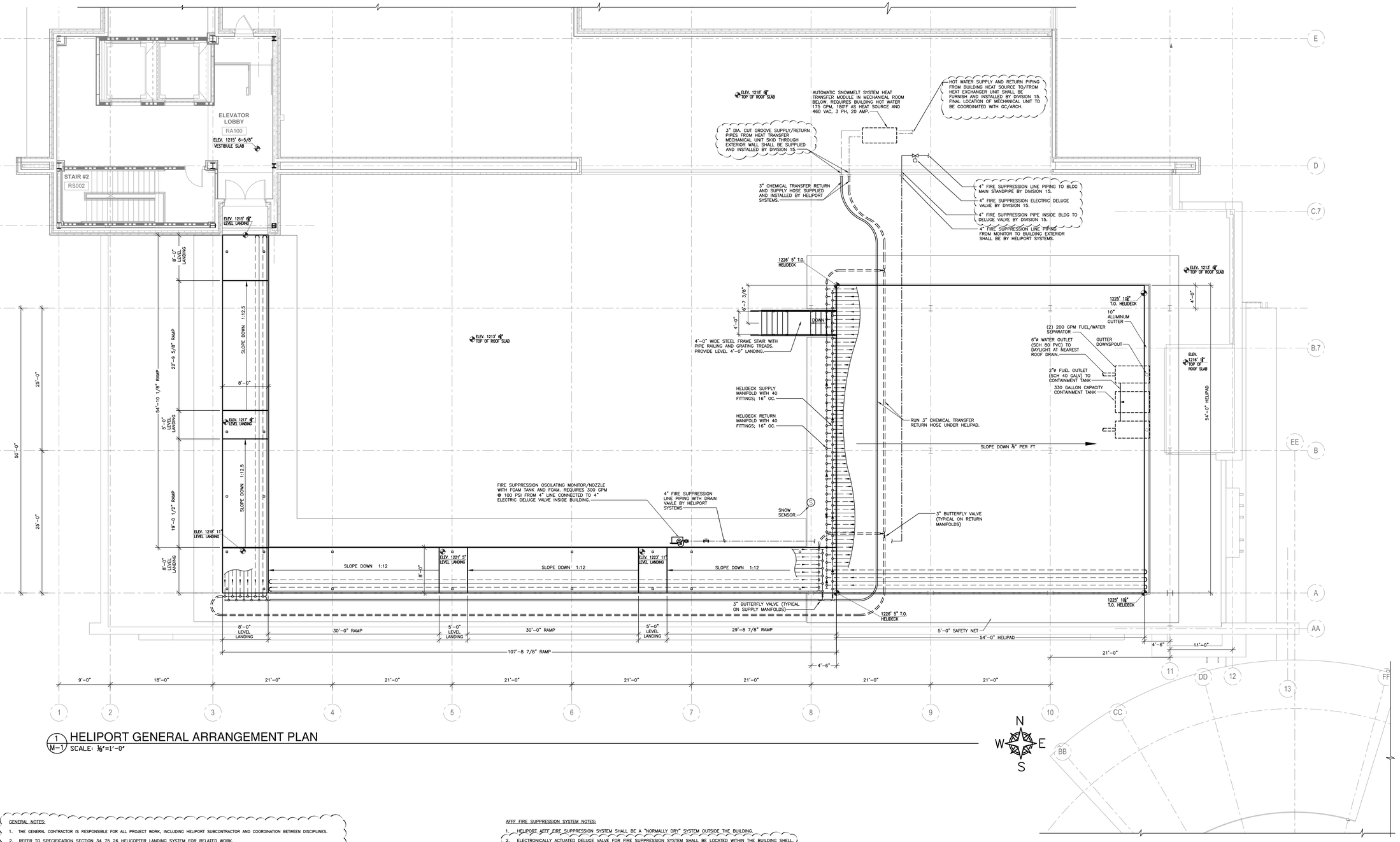

HELIPORT GENERAL ARRANGEMENT PLAN

(1) (M-1) SCALE: 1/8"=1'-0"

GENERAL NOTES:

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL PROJECT WORK, INCLUDING HELIPORT SUBCONTRACTOR AND COORDINATION BETWEEN DISCIPLINES.
2. REFER TO SPECIFICATION SECTION 34 75 26 HELICOPTER LANDING SYSTEM FOR RELATED WORK.
3. ALL REQUIRED ROOF AND WALL PENETRATIONS AND SEALING SHALL BE BY GENERAL CONTRACTOR.
4. FIRE SUPPRESSION PIPING FROM HELIPORT MONITOR BUILDING EXTERIOR SHALL BE BY HELIPORT SYSTEMS.
5. HELIPORT UTILITY SNOWMELT PIPING FROM BUILIDING EXTERIOR TO THE HELIDECK AND RAMP MANIFOLDS SHALL BE BY HELIPORT SYSTEMS.

SNOW MELT HEATING SYSTEM NOTES:

1. HELIPORT HYDRONIC SNOW MELT HEATING SYSTEM SHALL BE HYDRONIC WATER/GLYCOL TYPE WITH BUILDING HOT WATER 180°F AT 175 GPM AS THE BUILDING HEAT SOURCE.
2. SNOW MELT HEATING SYSTEM MECHANICAL UNIT SHALL BE A COMPLETE FUNCTIONAL SKID MOUNTED UNIT FURNISHED AND SET IN PLACE BY HELIPORT SYSTEMS. APPROXIMATE SKID DIMENSIONS: 2'-8"W x 6'-0"L x 6'-0"H.
3. GLYCOL SUPPLY AND RETURN LINES OUTSIDE OF BUILDING SHALL BE BY HELIPORT SYSTEMS, SUSPENDED FROM HELIPORT STRUCTURAL FRAMING TO THE MAXIMUM EXTENT POSSIBLE USING HOT DIPPED GALVANIZED BEAM CLAMPS AND THREADED ROD HANGERS. WHERE PIPING IS REQUIRED TO BE RUN ACROSS ROOF, IT SHALL BE SECURELY STRAPPED TO PILLOW BLOCKS OR TREATED WOOD BLOCKING AND RUN BY MOST DIRECT ROUTE POSSIBLE. INSTALLATION METHODS FOR PIPING TO BE RUN ACROSS ROOF SHALL BE APPROVED BY ROOFING MANUFACTURER PRIOR TO INSTALLATION. EXTERIOR GLYCOL SUPPLY/RETURN LINES SHALL BE UN-INSULATED UHMW CHEMICAL TRANSFER HOSE.
4. SNOW MELT TUBING IN HELIPORT DECK, RAMP, MANIFOLDS, SPECIALTY VALVES AND FITTINGS AND GLYCOL SUPPLY AND RETURN PIPING (FROM MAINFOLD TO BUILDING EXTERIOR) SHALL BE FURNISHED AND INSTALLED BY HELIPORT SYSTEMS.
5. ALL ELEMENTS OF HELIPORT SNOW MELT HEATING SYSTEM SHALL BE RATED FOR 125 PSI MINIMUM. COMPLETED SYSTEM SHALL BE PRESSURE TESTED WITH WATER TO 1.5 TIMES THE RATED PRESSURE AND ANY LEAKS CORRECTED PRIOR TO SYSTEM FILL AND START UP.
6. HELIPORT SNOW MELT HEATING SYSTEM MECHANICAL UNIT SHALL BE DESIGNED TO PROVIDE A 160° F SOLUTION OF 50% WATER AND 50% PROPYLENE GLYCOL. SYSTEM SHALL BE FILLED BY HELIPORT SYSTEMS. HELIPORT SNOW MELT HEATING SYSTEM WATER GLYCOL SOLUTION SHALL BE FURNISHED BY HELIPORT SYSTEMS.

AFFF FIRE SUPPRESSION SYSTEM NOTES:

1. HELIPORT AFFF FIRE SUPPRESSION SYSTEM SHALL BE A "NORMALLY DRY" SYSTEM OUTSIDE THE BUILDING.
2. ELECTRONICALLY ACTUATED DELUGE VALVE FOR FIRE SUPPRESSION SYSTEM SHALL BE LOCATED WITHIN THE BUILDING SHELL.
3. FIRE SUPPRESSION SYSTEM OSCILLATING MONITOR, NOZZLE, FOAM CONCENTRATE STORAGE TANK, AND AFFF FOAM CONCENTRATE SHALL BE FURNISHED, INSTALLED, AND FLOW TESTED BY HELIPORT SYSTEMS.
4. HELIPORT FIRE SUPPRESSION SYSTEM SUPPLY PIPING SHALL BE 4" DIAMETER, HOT DIPPED GALVANIZED, AND A MINIMUM OF 296 GPM FLOW AT 100 PSI MINIMUM.
5. FIRE SUPPRESSION LINE PIPING SHALL BE FURNISHED WITH DRAIN VALVE(S) AS NECESSARY TO ALLOW COMPLETE DRAIN DOWN OF "NORMALLY DRY" EXTERIOR PIPING FOLLOWING SYSTEM OPERATION. ALL PIPING OUTSIDE THE BUILDING SHALL BE BY HELIPORT SYSTEMS.
6. OSCILLATING MONITOR SHALL BE HELIPORT SYSTEMS MODEL HFPDM, UL LISTED.
7. AFFF FOAM CONCENTRATE SHALL BE 1%, LOW EXPANSION AFFF, FREEZE PROTECTED, INSULATE PN 415301, UL LISTED.

HELIPORT AFFF FIRE SUPPRESSION SYSTEM DESIGN CALCULATIONS:

1. DESIGN STANDARD: NFPA 418 STANDARD FOR HELIPORTS. HELIPORT CLASSIFICATION: H-2 (HELICOPTERS 50 TO 80 FEET LONG).
2. NFPA 418 RECOMMENDS AFFF APPLICATION RATE OF 0.10 GPM/SF OF LANDING PAD SURFACE AREA.
3. OSCILLATING MONITOR: LANDING PAD SURFACE AREA = 54'-0" x 54'-0" = 2916 SF. 2916 SF x 0.10 GPM/SF = 291.6 GPM MINIMUM, + 4 GPM FOR MONITOR DRIVE MECHANISM = 295.6 GPM. MINIMUM WATER PRESSURE AT 295.6 GPM AT 100 PSI MINIMUM
4. NFPA 418 RECOMMENDS FIXED FOAM SYSTEMS HAVE A 5 MINUTE DURATION OF AFFF FLOW.
5. 295.6 GPM FLOW RATE X 1% AFFF CONCENTRATE = 2.95 GPM CONCENTRATE FLOW. 2.95 GPM X 5 MINUTES = 14.75 GALLONS OF FOAM CONCENTRATE REQUIRED. AFFF CONCENTRATE STORAGE TANK CAPACITY = 25 GALLONS. 25 GALLON CAPACITY DIVIDED BY 2.95 GPM = OVER 8.47 MINUTES OF FOAM AVAILABLE WHEN FLOWING 295.6 GPM FROM FULL CONCENTRATE STORAGE TANK.

FUEL/WATER SEPARATOR NOTES:

1. HELIPORT FUEL/WATER SEPARATOR AND FUEL CONTAINMENT TANK SHALL BE FURNISHED AND INSTALLED BY HELIPORT SYSTEMS, COMPLETE WITH INDICATED PIPING.
2. FUEL/WATER SEPARATOR PIPING SHALL BE SUSPENDED FROM HELIPORT STRUCTURAL FRAMING TO THE MAXIMUM EXTENT POSSIBLE USING GALVANIZED BEAM CLAMPS AND THREADED ROD HANGERS. WHERE PIPING IS REQUIRED TO BE RUN ACROSS ROOF, IT SHALL BE SECURELY STRAPPED TO PILLOW BLOCKS OR TREATED WOOD BLOCKING AND RUN BY THE MOST DIRECT ROUTE POSSIBLE. INSTALLATION METHODS FOR PIPING TO BE RUN ACROSS ROOF SHALL BE APPROVED BY ROOFING MANUFACTURER PRIOR TO INSTALLATION.
3. PROVIDE FERNCO OR SIMILAR ADJUSTABLE TYPE COUPLING FOR TRANSITION FROM NOMINAL 6"ø GUTTER DOWN SPOUT(S) TO 6"ø CAST IRON PIPING AND FROM 6"ø CAST IRON PIPING TO NOMINAL 6"ø SEPARATOR INLET CONNECTION(S). ALSO, FROM NOMINAL 6"ø SEPARATOR OUTLET CONNECTION(S) TO 6"ø PVC PIPING. SIX (6) FLEXIBLE COUPLINGS REQUIRED. FLEXIBLE COUPLINGS SHALL BE FURNISHED AND INSTALLED BY HELIPORT SYSTEMS.
4. SEPARATOR FUEL OUTLET AND CONTAINMENT TANK FUEL INLET PIPING CONNECTIONS ARE 2"ø NPT.

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NEW ROOFTOP HELIPORT
FOR
VA MEDICAL CENTER
Pittsburgh, PA

REVISIONS:
21 AUG 2009
27 JAN 2010
29 JAN 2010
20 MAY 2010

DRAWN: JH

SHEET NO.
HP-M-1